



Department of Environmental Economics
Working Paper No. 6

Economic and Environmental Costs of Tourism: Evidence from District Abbottabad



Ayesha Shujahi
Anwar Hussain

Department of Environmental Economics
Pakistan Institute of Development Economics, Islamabad, Pakistan



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Ayesha Shujahi

Pakistan Institute of Development Economics, Islamabad

and

Anwar Hussain

Pakistan Institute of Development Economics, Islamabad

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS
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Pakistan Institute of Development Economics
Islamabad, Pakistan

E-mail: publications@pide.org.pk

Website: <http://www.pide.org.pk>

Fax: +92-51-9248065

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ABSTRACT

Tourism plays an important role in the expansion of a country's economy but it is also strongly linked with environment. The linkage of tourism with environment is complex as much worse impacts are attached with tourism related activities. This study inspects the economic and environmental cost related with tourism and its impacts on local residents in the district Abbottabad, Khyber Pakhtunkhwa, Pakistan. Primary as well as secondary data is used. The responses of respondents including local residents, tourists, hotel managers and shopkeepers associated with economic and environmental costs are being captured via Questionnaires and interviews. It is found that tourism affects, in terms of increase in traffic congestion, prices of good, littering and noise pollution. It is recommended that tourism can contribute in environmental conservation, if element of sustainability is included in planning and management process.

Keywords: Abbottabad, Khyber Pakhtunkhwa, Congestion, Tourist, Littering

1. INTRODUCTION

Tourism is considered mainly as a source of creating job opportunities, foreign revenue generation and employment. However, not all the impacts of tourism can be considered positive. The impacts of tourism are divided into three wide classes such as economic, environmental and social. Economic impact includes financial streams connected with tourist actions, both directly and indirectly. Environmental impact comprises the deviations in natural and man-made setting or atmosphere and social impacts cover the fluctuations in societal, traditional and dogmatic standards and are connected with emotional variations within folks implicitly [Fredline (2002)].

Pham (2012), tourism is professed totally as economic activity. It keeps a positive as well as a negative side. Positively, it is perceived as source of job opportunities, employment and financial expansion [Adnan (2013), Kruja, *et al.* (2012); Vargas-Sánchez, *et al.* (2009); Diedrich and Garcia-Buades (2008); Liu and Var (1986); Shaw and Williams (2004)], also fiscal taxes, per capita income and standard of living gets enhanced [Huh and Vogt (2008); Haralambopoulos and Pizam (1996)]. On the other hand, Local people at a particular area experience living expenses, which is rates of commodities, get increase, and discrimination of financial resources. Ardahaey (2011)

One of the emergent businesses in the world is Tourism and millions of tourists are involved in this industry and contribute a lot in gross domestic product (GDP) of a country. The increase in number of tourists has been noted from 25 million to 940 million since 1950 to 2010 [UNWTO (2011)]. Presently, most of the developing countries are viewing tourism as an encouraging opportunity for economic and social growth but less attention is given to environment that is one of the essentials key elements in achieving sustainability. Sustainability comprises both economic and environmental sustainability. The connection between economics and environment cannot be eliminated and it is worldwide accepted to be part of tourism industry [Mottaleb (2007)].

Tourism has a major role in the attainment of Millennium Development Goals (MDGs) specifically, MDG 7 that is environmental sustainability [Smith (2011)]. This means, ecological conservation play significant role in tourism. Tourism can generate positive effects on environment by supporting protection through serving as an instrument to finance the preservation of natural surroundings [Connell, Page, and Bentley (2009)]. China is one of the rising tourist destinations of the world but notable financial progress is escorted by the destruction of conservational excellence and there is great need of sustainable or ecological progress [Huang (2012)].

Tourism has become a vital business particularly in those areas where there are no bases for industry. This promotes local livelihoods. However, this also has some negative impacts on the local residents like increase in pollution, noise and congestions. It puts additional burden on water, energy consumption and other natural resources. Social and economic challenges linked with tourism cannot be ignored. Tourism has worse effect on environment and local communities in case of mismanaged and unplanned tourism [UNWTO (2011)].

Alshuwaikhat (2005), argues that degradation and depletion of natural resources like water, soil and air occurs because of unplanned and huge development that keeps worse effect on anthropogenic and natural ecosystem. This paper has main emphasis on some effective and efficient adaptation policies in order to overcome the serious issues of urbanisation. Sustainability and environmental impact assessment (EIA) are considered as key adaptation techniques by this paper. The development in sustainable manner can be achieved by strategic environmental assessment (SEA) in developing countries. The roadmap for sustainable development can be created by the effective implementation of strategic environmental assessment i.e. SEA. This paper concluded combined efforts by governmental, non-governmental and international organisations with PPP (policy, plan and programme), in order to achieve sustainable development through SEA in developing countries. The failure of environmental impact assessment can be overcome through strategic environment assessment i.e. SEA in developing countries.

Zusammenarbeit (2003), in his book that is 'tourism and local agenda 21', argues that tourism keeps important role in local economies of many countries especially developing countries. The unplanned and illegal development leads to many worse effects on the environment, natural resources and society. The negligence of local bodies and governance is mainly responsible for this unplanned construction. Sustainability is found to be a way to fulfil the tourism goals linked with community. Case studies of different sites includes urban, rural, seaside and moderate areas are considered for diversification sake. Local Agenda 21 which is included in agenda 21 is given to local governance that puts main stress on community approach in order to manage and plan the tourism in a sustainable way. International Council for Local Environmental Initiatives (ICLEI) is member of UNEP, puts main stress on management and planning of tourism at the local level.

The role of tourism in economic growth and poverty reduction is being discussed by United Nations Conference on Trade and Development, held in 28 January 2013. Tourism is considered as important tool in monetary progress by developing countries but interconnection among poverty reduction, economic growth and development is not programmed. The two objectives that are economic growth and poverty reduction can be achieved if construction and infrastructure linked with tourism generate job opportunities, services and enhancement in welfare of the people, economy will get boosted and secondly, if

development would be unplanned, illegal and non-organised then motive would not be achieved and social and environmental issues are faced by developing countries. It would be at the cost of environment, so element of sustainability can play a vital role in economy of developing countries but it has been a great question, there is a great need of urgent policies, strategies, agendas and conventions to overcome on the problems and issues linked with tourism development.

Pakistan has wonderful assets for tourism by feature of its long rich history, cultural diversity, glaciers, deserts, charming sceneries and mountain ranges. Earlier, tourism industry was totally ignored in Pakistan but after recognising the economic significance of tourism as a source of job opportunities, employment and transportation; tourism industry is under focus since 1960s, when the department of tourism got established. Now the tourism department in Pakistan has gained the status of tourism department under the ministry of tourism but this business is declining in most of the places in Pakistan due to lack of infrastructure and facilities and adverse law and order situation [Zaman, Khan, Syed, and Ahmad (2011)].

Abbottabad is a stunning town in Hazara region of Khyber Pakhtunkhwa province, in north-west of Pakistan. The city attributes includes nice location, scenic beauty, pleasant weather and diversity of flora and fauna, which attracts thousands of tourists every year. Tourism is the major component of this city's economy. It is also a transit point to most of the important regions of Pakistan. Some of the tourist destinations in and around Abbottabad are Ayubia, Thandiani, Shimla Hills, Ilyasi mosque, Harnoi (Dor watercourse valley) and Galliyat. The potential of Abbottabad as a tourist destination is suffering as a result of official negligence, over construction, unplanned land use and pollution from transit traffic.

The previous studies conducted on tourism mainly focused on the economic impacts of tourism and ways to generate more economic benefits by developing tourism. The negative externality (economic and environmental costs) of tourism are mostly ignored in Pakistan. This study will add to the existing literature.

In order to evaluate the cost related with economic and environmental impacts of tourism in Abbottabad Valley, the study used both primary data, secondary data and interviews are conducted to know the impact on host community in the prominent tourist destinations of Abbottabad [(IUCN (2004)]. This research will answer the questions such as Does tourism affects the environment negatively? Does tourism affect local community in economic terms?

This study is based on the following specific objectives:

- (1) To show the impact of tourism on environmental degradation.
- (2) To assess the impact of tourism on local residents of Abbottabad.

2. DATA AND METHODOLOGY

2.1. Introduction

This section is divided into the following sub sections. Section one is about the description of study area. Section two is about data description, where it provides the detailed procedure for the data collection. The last section discusses methodology.

2.2. Background of Study Area

District Abbottabad is located in Khyber Pakhtunkhwa. The location of district Abbottabad at the base of Himalaya's lands, situated between 33° 50' and 34° 23' North, 73° 35' and 73° 31' East, In North, Abbottabad is bordered by Mansehra district, Muzaffarabad district in East, Haripur district in West while Islamabad Capital territory to the south.

2.3. Data Description

For this study primary as well as secondary data has been used. Questionnaire was designed for the collection of primary data collected from the respondents. Collection of data is done from the respondent via field survey. The last three years monthly data on prices, garbage, traffic congestion and number of tourist were taken from Price control office, Municipal Corporation of Abbottabad, Traffic office and Pakistan Tourism Development Corporation (PTDC).

2.4. Sampling Design

The study also used primary data which was collected for 300 local resident, 270 tourist, 70 shopkeeper and 40 hotels managers. The respondents were randomly selected with 95 percent confidence interval. Data was collected through structured questionnaire (see Appendix-A, B, C, D). Before conducting the actual survey, it was necessary to pre-test the questionnaire in the field. In pretesting survey the new questions arose and minor amendments were needed in the questionnaire. Questionnaire was re-developed in the light of pretesting.

2.5. Analytical Tools

For the analysis of the data descriptive statistics such averages, percentages, graphs have been used. The details are given in subsequent section:

2.6. Impact of Tourism on Congestion

Traffic congestion is a condition characterised by slower speed, traffic jam, longer trip time, and increased vehicles. For estimating the congestion, the

Traffic Flow Unit method is used. Data on congestion (traffic count) in normal days, weekends, summer vacations and Eid Holidays is obtained from district police office, Abbottabad. The data is compared with the standards i.e. if the Traffic Flow Unit per hour is more than 800 for urban roads, then that is considered as congestion.

2.7. Impact of Tourism on Littering

Monthly data on the number of trips or garbage lifting trollies for the year 2010-2014 is obtained from municipal committee, Abbottabad. Number of trips or garbage lifting trollies in peak months (June-August) are compared with normal months. Simple regression is to be used to estimate the impact of number of tourists on the Number of trips or garbage lifting trollies using monthly data ranging from 2010-2014.

The model is as under:

$$GLT = b_0 + b_1NT + U_i$$

Where:

GLT is the garbage lifting trollies per month

NT is the number of tourists per month

U_i is the stochastic term

2.8. Impact of Tourism on Noise

Primary data is gathered on normal days and weekends. Average is compare with National Environment quality standards. Accordingly, the maximum permissible limit is 85 decibel (Lundberg) [NEQS (1993)]. In this study, the views of the experts from PTDC are utilised. According to them, tourists normally visit on Friday and Sunday afternoon, while 11.30 onward from Tuesday to Thursday. Therefore, in this study, the Sony Tube¹ was used for one hour on the aforementioned timings only. If the average dB turns out to be more than the standard (85 dB), then that is considered as noise pollution. This exercise is carried out on Alyasi masjid, Harnoe, Shimla Hills and Fwara Chowk Main Abbottabad.

2.9. Impact of Tourism on Prices

With the increase in the number of tourists, the prices of various goods are also affected. The local community definitely is also charged by these prices. Simple Price Indices are used. For this, monthly data from 2012-2014 on prices of major goods used by tourists is obtained from price control office, Abbottabad. The index is constructed as follows:

¹ Sony tube is software, which measure the noise level.

$$PI = \frac{\sum P_i}{\sum P_o} \times 100$$

Where:

PI is the Price index

P_i is the price in the current month

P_o is the base month price (Average of the sum of prices in each year).

The volatility in the prices is assessed with the normal months and peak month's prices. Further, this index is constructed for 25 items (see Appendix-1, 2&3). The simple regression is also estimated to show the impact of number of tourists on the Price index, given as:

$$PI = b_0 + b_1NT + U_i$$

Where:

PI is the simple aggregative price index

NT is the number of tourists per month

3. RESULTS AND DISCUSSIONS

3.1. Introduction

In this section, economic and environmental analysis of tourism based on the information taken from tourists, local residents, hotel managers and shopkeepers for district Abbottabad, Khyber Pakhtunkhwa is discussed.

3.2. Perceptions of the Respondents about the Effects of Tourism

The Table 1 delivers details on the perceptions of the respondents such as local residents, tourists and shopkeepers for different variables including traffic congestion, noise pollution, prices of goods and garbage in linked with tourism. According to the respondents' perceptions, traffic congestion is seen highly due to tourism in district Abbottabad. They were also of the view that prices of various goods also increase due to tourism. Both the tourists and the local residents are then charged by the higher prices. The shopkeeper also stated that prices increases in the study area due to increase in the number of tourists. Majority of the local residents also stated that the level of noise pollution also increase due to increased number of tourists. Garbage also increases due to increase number of tourists in District Abbottabad. In sum, according to the perceptions of the respondents, the tourism impacts traffic congestion, prices, noise pollution and garbage.

Table 1
*Perceptions of the Respondents about the Effect of
 Tourism on Prices and Environment*

Respondents	Increase in Traffic Congestion		Increase in prices		Increase in Noise Pollution		Increase in Garbage	
	Yes	No	Yes	No	Yes	No	Yes	No
Tourist	254	16	255	15	--	--	--	--
Local Resident	275	25	276	24	276	24	291	8
Shopkeeper	--	--	61	9	--	--	--	--

Source: Field Survey.

3.3. Congestion and Tourism in Abbottabad

3.4. Traffic Count Statistics

Table 2 is depicting the problem of traffic congestion. The hourly basis data on tourist months is obtained from traffic police office, Abbottabad. According to traffic flow unit method, traffic congestion exist, if number of vehicles per hour exceed than 800 for urban roads [NGFL (2001)]. It is obvious from the table that number of vehicles per hour on normal, weekends, summer vacations and Eid holidays are exceeding the standard limit, which means problem of traffic congestion exist in the study area.

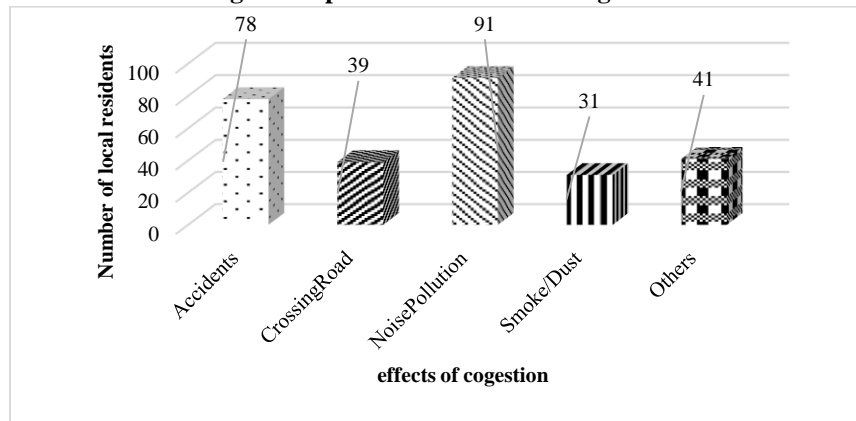
Table 2
Average Traffic Count in District Abbottabad

	Average	Vehicles per Hours
Traffic Counts on Normal Days	27500	1146
Traffic Counts on Weekends	35000	1458
Traffic Counts On Summer Vocations	55000	2292
Traffic Counts on Eid Holidays	85000	3542

Source: Traffic Police office, 2014, Abbottabad.

3.5. Perception on the Effects of Traffic Congestions

In order to know the effects of the problem of traffic congestion due to increased number of tourists, the respondents were asked whether this problem creates further problems or not. These responses are reported in Figure 1, which shows different problems faced by local residents due to traffic congestion in tourist season. According to the responses, traffic congestion further creates problems of noise pollution, accidents, crossing road, smoke and dust. The frequency of Noise pollution is found higher as compared to other problems.

Fig. 1. Responses of Effects of Congestion

3.6. Littering and Tourism in Abbottabad

Simple Regression is used to estimate the impact of number of tourist on garbage lifting trolleys or number of trips. The result shows that one percent increase in number of tourist brings 0.02 percent increase in the garbage lifting trolleys (GLT). Its coefficient is also statistically significant at 1 percent, 5 percent and 10 percent level of significance.

Table 3

*Regression Results for the Impact Number of Tourists
on Garbage Lifting Trolleys*

Dependent Variable: LOG(GLT)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.358009	0.038715	138.3953	0.0000
ln(NT)	0.023538	0.004635	5.078685	0.0000
Diagnostics				
R-squared*	0.431372	Adjusted R-squared		
F-statistic	25.79304	Prob (F-statistics)		0.000014

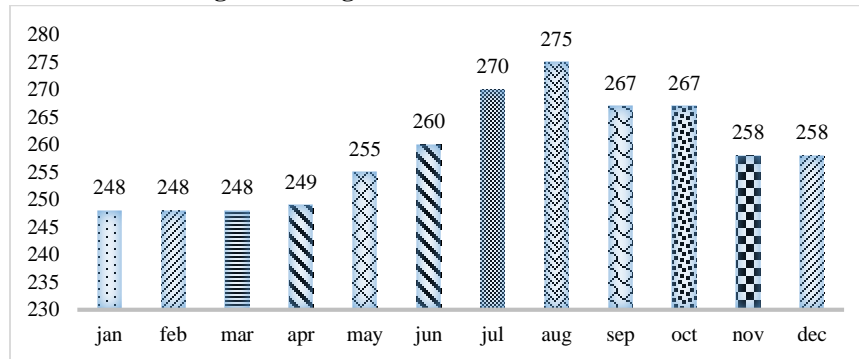
* The value of R-square is less than 0.5 because of excluding other explanatory variables variable due to non-availability of data

The data on littering, congestion, number of tourist, and prices of goods are showing increasing trend in the year 2014 comparative to the past. Although tourism get decreased in Pakistan due to law and order situation in some places but in general tourism has been increased over the years. The number of tourists has been increased by 20 percent in the year 2014 comparative to the year 2013. Even within the year, the numbers of tourists vary over the months. In peak months (June-August), the number of tourists was 20736 per month in the year

2014 while in normal months (March-May) and (September-October), they were 4200 per month. The number of tourists in the months (November-February) those were 2100 per month in the year 2014 [PTDC (2014)].

In the peak tourists' months (June-August), the garbage collection in district Abbottabad also increased as compared to other months. The statistics in Figure 2 also shows that the number of trips (Garbage) has been increased during peak tourists' months and same trend is to be seen in the year 2013, 2012, 2011 and 2010.

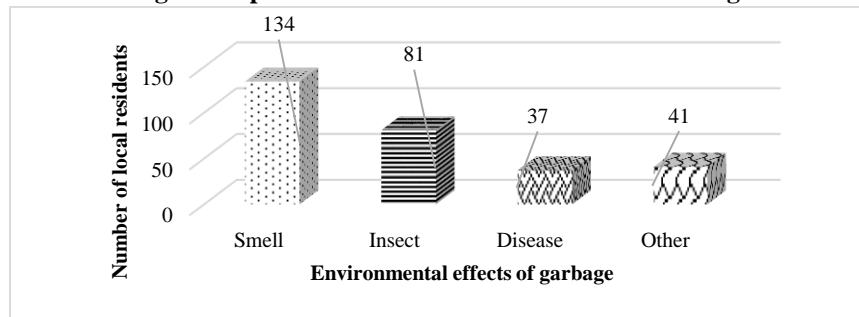
Fig. 2. Garbage Collections in the Year 2014



3.7. Environmental Impacts of Garbage

As many environmental effects are linked with excess of garbage pollution. So in order to know the problems, it was included in the field survey. The figure 3 is showing the environmental problems linked with garbage pollution. Due to excess of garbage, environmental concerns which include smell, insects and mosquitoes, and infectious diseases are recorded by local residents in the study area. The responses of respondents against smell are found to have much higher frequency than other environmental problems.

Fig. 3. Responses of Environmental Effects of Garbage

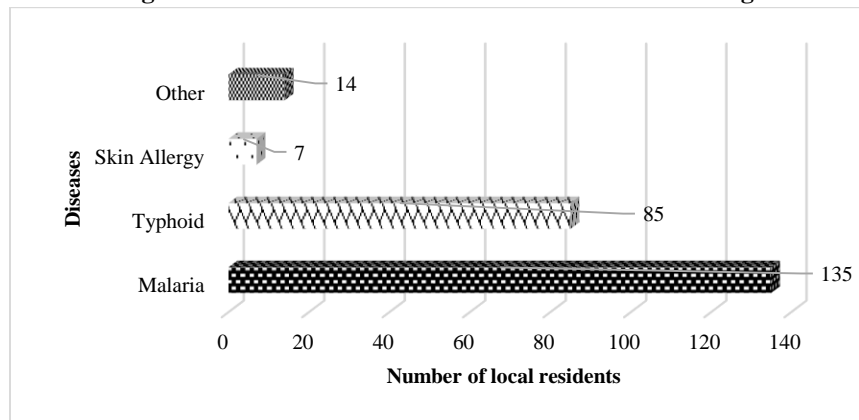


Source: Field Survey.

3.8. Health Effect Due to Garbage

The health concerns or diseases linked with garbage are also taken under consideration. The Figure (4) is depicting the health problems linked with garbage pollution. Malaria, typhoid and skin allergy are common diseases recorded by local residents. Excess of garbage causes environmental problems which lead to health issues. The responses against typhoid are reported much higher by locality after malaria. Asthma and skin diseases fall in the other category.

Fig. 4. Health Effects on Local Residents Due to Garbage



Source: Field Survey.

3.9. Health Cost Due to Garbage

The Table 4 is depicting the costs beard by local residents, linked with garbage pollution. Almost 85 responses are noted against Typhoid, 135 against malaria, 7 against skin allergy and 4 responses fall for the other category. The highest estimated average costs are noted against skin allergy while the lowest observed against malaria. Total numbers of observations are 231, out of 300 sample size of local residents, which shows that 69 respondents did not bear the cost.

Table 4

Health Cost on Local Residents Due to Garbage

Cost Item	Amount in Rs (Per Month)	No. of Observations
Typhoid	2615	85
Malaria	1609	135
Skin Allergy	1742	7
Other (Asthma, Eyes Problems)	3800	4
Total	9766	231

3.10. Preventive Cost of Garbage

The Table 5 depicts the preventive cost by local residents against the diseases like malaria and typhoid. About 221 respondents bear on average costs of Rs. 167 per month while the other 79 respondents did not bear any cost.

Table 5

Preventive Cost on Local Resident due to Garbage

Cost Item	Amount in Rs (Per Month)	No of Observations
Mosquito Spray / Mosquito Nets (Marchardani)	167	221
Total	167	221

Source: Field Survey.

3.11. Garbage Collection

The responses of hotel manager regarding garbage collection are being captured in the study via questionnaire. It is recorded that AMC role is not satisfactory in the study area. Mainly high frequency of local bodies' are hired by hotels for the collection of garbage and after local bodies, own staff has high frequency in playing garbage duties.

3.12. Noise Pollution and Tourism in Abbottabad

Primary data is gathered to measure the noise pollution. According to NEQS, the maximum permissible limit is 85 dB and above this limit means the existence of noise pollution problem in the study area. The result shows that in the months of February and March, average noise value is below the standard which means that in normal months, this problem does not exist. But in the tourist months, i.e. June, July and August, average value has been exceeded from standard value, which means that noise pollution exists in the study area.

Table 6

Noise Pollution Statistics at Tourist Spots in Normal and Tourist Months

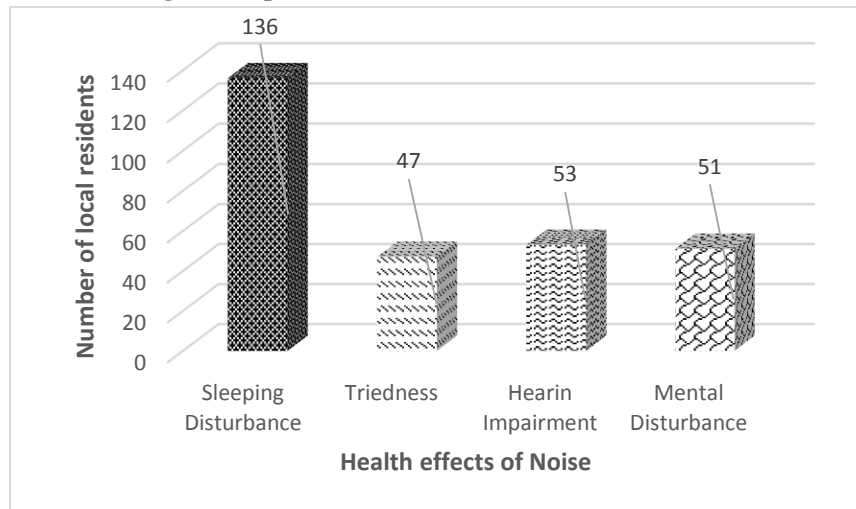
Sites	Average Noise dB in Feb 2015	Average Noise dB in March 2015	Average Noise dB in June 2015	Average Noise dB in July 2015	Average Noise dB in August 2015
Alyasi Masjid	58.2	77.0	87.2	86.7	89.0
Harnoe	60.1	81.5	86.1	86.5	91.0
Shimla Hills	50.4	72.0	87.4	87.0	94.0
Fwara Chowk	68.0	77.0	88.0	90.0	97.7

Source: Field Survey.

3.13. Effects of Noise Pollution on Health

As many health problems are linked with noise pollution, so the respondents were asked to report their effects on health. These responses are given in Figure 5 showing the frequency or responses of the health problems reported by local residents, linked with noise pollution. Sleeping disturbance, tiredness, hearing impairment and mental disturbances are commonly noted. The response against sleeping disturbance is recorded much higher among the other health issues.

Fig. 5. Responses of Health Effects of Noise Pollution



3.14. Costs Paying by Local Residents Due to Noise Pollution

The Table 7 is depicting the cost beard by local people, related with noise pollution. Almost 12 observations are noted against hearing impairment, and 43 against mental and sleeping disturbance. The highest average estimated cost is noted against hearing impairment. Total numbers of observations noted are 55, while the other 245 respondents did not bear any cost.

Table 7

Health Cost Due to Noise Pollution

Cost Item	Amount in Rs (Per Month)	No of Observations
Hearing Impairment	1770	12
Patient Mental Disturbance/ Sleeping Disturbance	458	43
Total	2228	55

Source: Field Survey.

3.15. Problems Faced by Tourist in the Study Area

The problems faced by tourists in the study area are captured via questionnaire. Responses against noise, littering and lack of availability of rooms or over booking are recorded commonly. The responses of noise and littering are found to be much higher. Tourist mainly effect from noise and littering same like local residents and these problems exist in the study area.

3.16. Price Fluctuation and Tourism in Abbottabad

The result shows that one percent increase in number of tourist brings 2.2 percent change in prices increase. The value of t-Statistic is 2.0 which show that result is significant.

Table 8

Regression Results of the Impact of Tourism on Price Fluctuations

Dependent Variable: LOG(PI)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.419012	0.096784	45.65832	0.0000
LOG(NT)	0.022156	0.011586	1.912237	0.0643
Diagnostics				
R-squared*	0.097105	Adjusted R-squared	0.070549	
F-statistic	3.656650	Prob(F-statistic)	0.064302	

*The value of R-square is less than 0.5 because of excluding the other explanatory variables due to non-availability of data.

The monthly price indices of selected commodities for the year 2014, 2013 and 2012 are shown in Appendices (1, 2 and 3). The prices of different commodities like pakory, rice, pulses, red beans and gram etc. remain the same from January to May in the year 2014, 2013 and 2012, as these are the normal tourists months while in June-August (peak months), the prices of most of the selected commodities get increased between 10 to 20 percent. In September, and October (normal months), the prices of these commodities decreased by 10 percent. So it is obvious from the data that Peak months of tourism have strong influence on prices but most fluctuations are observed in prices of beef, mutton, dahl mong, dahl mash, chawal basmati, red bean and mix sweet. The local community is also priced at those prices. It is observed that prices usually increase in tourists' months, but due to factor of dishonesty, shopkeepers charge more than the increased prices for different goods which affects the local residents.

3.17. Price Fluctuated Commodities

In tourism season, prices of different commodities get higher and the responses of the local residents against fluctuated commodities are depicted in

this Table 9. The recorded responses show that there are many fluctuations in the prices of commodities in tourist months that affect not only tourist but also local residents. The responses are ranked according to frequency.

Table 9
Responses of Local Residents of Price Fluctuation

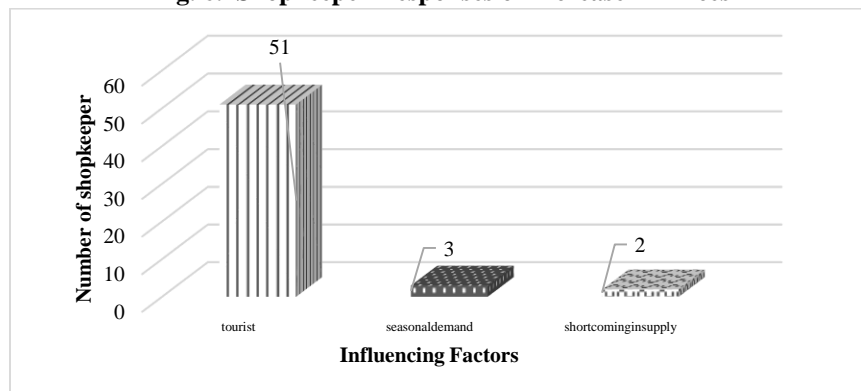
Commodities	Frequency	Ranking
Fruit	97	1
Vegetables	74	2
Cold Drink	52	3
Junk Food	26	4
Bakery	19	5
Other Item	21	6

Source: Field Survey.

3.18. Influencing Factors of Price Increase

The Figure 6 is showing the influencing factor which keep great effect on prices of goods in tourist months i.e. June, July and august. The number of tourist is found to have higher frequency comparative to seasonal demand, less supply and higher benefitted prices. As number of tourist increases in tourist area, their consumption demands also high and higher prices are charged in order to get maximum benefit in tourism season.

Fig. 6. Shopkeeper Responses of Increase in Prices

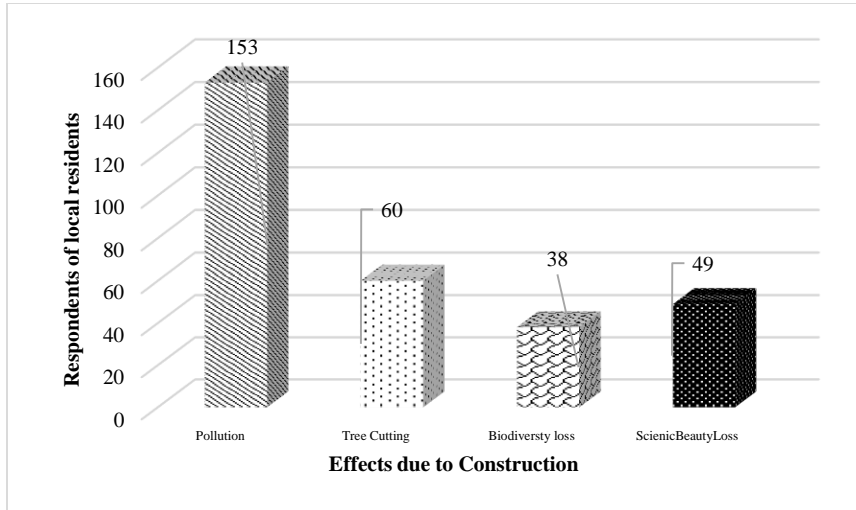


3.19. Environmental Effects Due to Construction

This graph depicts the environmental effects linked with construction. Due to unplanned and illegal construction, environment gets damage. The recorded problems associated with construction are pollution, tress cutting, biodiversity and loss of scenic beauty. The responses of pollution is noted to be much high by

the respondents or local residents. So apart from tourist, it is noted that there are some other factors too which contribute in the environment degradation.

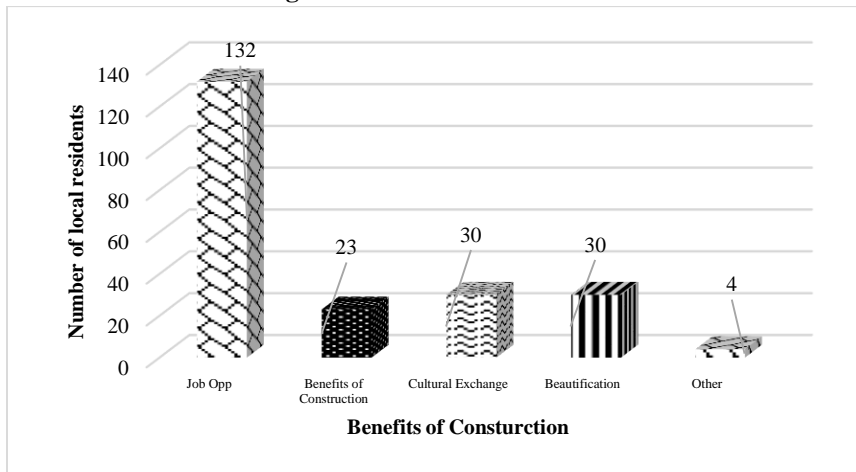
Fig. 7. Environmental Effects of Construction



3.20. Economic Benefits of Construction

Due to tourism expansion, community leads to many economic benefits. The Figure 8 is covering the responses of local residents linked with economic benefits. Tourism is considered as source of job opportunities by higher frequency of respondents. Facilities linked with construction like proper roads, cultural exchange and others.

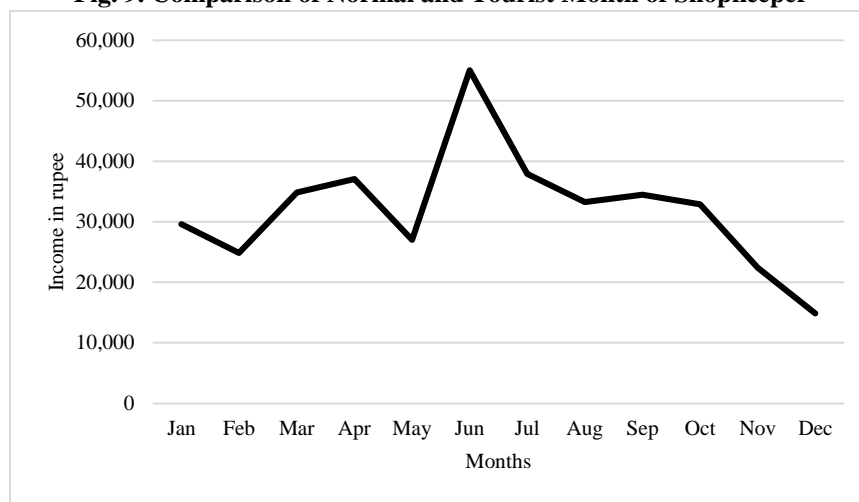
Fig. 8. Benefits of Construction



3.21. Tourist Busiest Months and Monthly Variation in the Benefits of the Shopkeeper

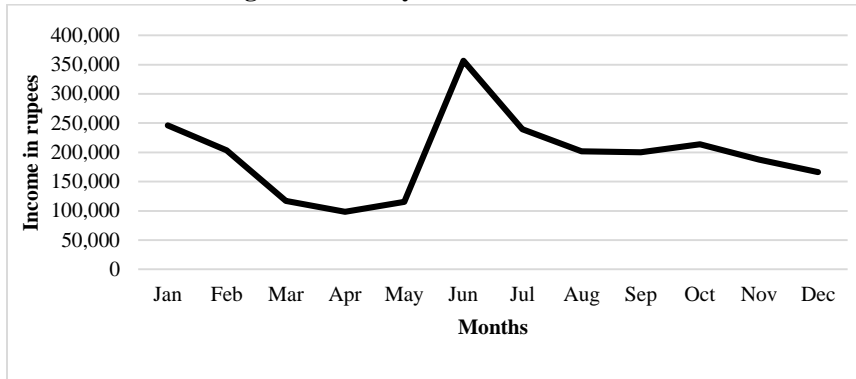
The responses of the shopkeeper's busiest tourism months are also captured via questionnaire. June, July and August are found to be main tourism season but among these, frequency of tourist visit or tourists arrival is recorded to be much higher in the month of July. The Figure 9 is depicting the benefits of shopkeepers in normal and tourist months. It is very clear that higher fluctuations and higher benefits are noted in tourist months comparatively normal months. The number of tourist is found to be an influencing factor and it is obvious that tourists mainly visit the tourist spots, and prices of commodities are recorded higher in this location, so shopkeeper get benefited more in tourist months.

Fig. 9. Comparison of Normal and Tourist Month of Shopkeeper



3.22. Hotel Managers' Information about the Tourism Months and Monthly Income of the Hotels

The responses of the hotel managers regarding busiest months are captured via questionnaire. June, July and August are found to be season months but arrival is found to be much higher in the month of July. There are many influencing factors like good weather and summer vacations but high number of tourist is found in month of July. This graph is showing responses of the income benefits of hotels in tourist months comparatively normal months. It is obvious that benefitted fluctuations are higher in tourist months as compare to normal. It is recorded that higher frequency of tourist mainly visit with families and stay in hotels. So profit in tourist months is much higher than normal months.

Fig. 10. Monthly Income of the Hotels

4. CONCLUSION AND RECOMMENDATIONS

The main objective of this study was to assess the Economic and Environmental Costs of tourism in District Abbottabad. For this purpose Primary as well Secondary data have been collected. Primary data is collected through questionnaires. For research work three hundred local, 270 tourist and 70 shopkeepers were randomly selected. Descriptive statistics and simple regression was used for the analysis of the data. The findings revealed that tourism affect prices, traffic congestions, noise pollution and garbage in the district.

More specifically,

- (i) The problem of traffic congestion is highlighted by the local residents as well as tourists. The responses recorded against traffic congestion are 275, by the local residents and 254, by the tourist.
- (ii) Price hike in the tourists' months which not only affect tourists but also affect the local resident. The numbers of tourists are found to be main influencing factor in increase in prices. The responses noted against increase in price are 51 by the shopkeepers.
- (iii) The local residents are found to be more effected with noise pollution in linkage with traffic. Sleeping disturbance and hearing impairment are issues which are directly linked with noise pollution. The responses recorded against sleeping disturbance are 136, 57 against tiredness and 53 against mental disturbances by the locality.
- (iv) The local residents are found to be affected most by increase in garbage in terms of Typhoid, malaria and Skin diseases. The responses noted against health diseases like malaria are 135, 85 for typhoid and 7 for skin allergy by the local residents.
- (v) The environmental effects linked with unplanned and illegal construction are recorded. The recorded Problems associated with construction are Pollution, tress cutting, biodiversity and loss of scenic beauty. The responses noted against pollution are 153, 60 for tress

cutting, 38 for biodiversity and 49 for loss in the scenic beauty, by the local residents.

This overall conclusion of this study is that tourism has economic as well as environmental costs and it affects not only the tourists but also the local residents. It is found that tourism affects prices of goods, traffic congestion, littering and noise pollution.

Based on the findings it is recommended that:

- (i) Due to garbage pollution, the local residents bear the health cost. For this purpose, the provincial government should put check and balance on AMC.
- (ii) Blowing of horns must be banned.
- (iii) Zebra crossing must be introduced in order to avoid the issues linked with traffic congestion, like accidents and road crossing etc.
- (iv) Government should take action against illegal and unplanned construction.
- (v) The government and Department of Forestry take action against the forest and resource depletion.
- (vi) The government should take positive and quick action like parking, road maintenance, road expansions and availability of traffic police in order to reduce the problems linked with highly traffic congestion and noise pollution should also be controlled.
- (vii) Government should emphasise on educational programmes, awareness, environmental assessment strategies and techniques and implementation of such policies that give benefit to local people and role of media would be of great worth.

The study did not cover the social and cultural costs of tourism. This study also did not cover all the tourist spot of Abbottabad; Additional research is required in this field. Further, the prices of different commodities also increased due to dishonesty factor but this study didn't capture this aspect which may be proposed for further research.

Appendices

APPENDIX 'A'

Section One

Local Resident Information

i) Where do you live?

Far Away from tourist spot ☐ Close to tourist spot ☐ other ☐

ii) How much is the distance of nearest tourist spot from your residency
-----km

iii) Does traffic increase during tourism season (June-Aug)

Yes ☐ No ☐

If "Yes", what problems do you face

iv) Does traffic create noise pollution? Yes No ☐

If "Yes", how it affect your health?

- a) Sleeping disturbance b) Patient Mental Disturbance
c) Tiredness d) Reducing working hours
e) Hearing Impairment f) Other _____.

v) How much health cost do you bear due to noise pollution? PKRs _____ Per month (if your health effect has been diagnosed due to noise pollution by doctor/lab test).

vi) Does waste are disposed properly by AMC in non-tourist (Oct-Feb) season? Yes ☐ No ☐

vii) Does garbage increase during tourism season (June-Aug) at tourist spot? Yes ☐ No

If "Yes", how it impacts on Environment?

- a) Smell b) Insect, mosquito and flies birth
c) Infection diseases d) other, specify

viii) Which diseases are common due to garbage pollution?

- a) Malaria b) Typhoid
c) Skin Allergy d) Other, Specify _____

ix) How much health (Malaria, Typhoid etc.) cost do you bear due to garbage pollution? PKRs _____ per months (if your health effect has been diagnosed due to garbage pollution by doctor/lab test).

x) How much adaptation cost (Nets, Mosquito sprays etc.) do you bear due to garbage effects?

PKRs _____ per month.

xi) Does AMC collect waste? Yes ☐ No ☐

If “yes”, then how much frequently in

a) Tourist months (June, July, Aug) _____

b) non-tourist months (Other) _____

If, “No”, then how much cost will you bear for hiring local body/staff for waste Disposal? PKRs. _____ per (day, week, month)

xii) Does prices of Goods increase in tourist season (June--Aug)?

Yes ☐

No ☐

Food Items ☐

Non-Food Items ☐

xiii) Do you think that increase in prices put an additional burden on your income?

Yes ☐

No ☐

If “Yes”, then how much Rs. _____ per month.

xiv) Rank the commodities according to high prices during tourist months and also mention the price increase (PKRs.)?

Cold Drinks ☐ ☐ Vegetables ☐ ☐ Fruits ☐ ☐

Beef ☐ ☐ Junk Food ☐ ☐ Bakery ☐ ☐

Other, Specify ☐ ☐

xv) Does prices mainly increase at

Tourist Spot ☐

Whole City ☐

Some Markets ☐

Other, Specify ☐

xvi) Does tourism create job opportunities? Yes ☐ No ☐

If “Yes”, then provide the following information.

Employment

Intensity Of Employment (No. of Hours and Persons)

Nature of Emp.	Tourist Months			Non-Tourist Months		
	Increase	Same	Decrease	Increase	Same	Decrease
Shopkeeper						
Juice maker						
Transportation						
Tourist Guide						
Café						
Other						

Sale (Profit & Loss)**Sale(Profit & Loss)**

	Tourist Months			Non-Tourist Months		
	Increase	Same	Decrease	Increase	Same	Decrease
Nature of Emp.						
Shopkeeper						
Juice maker						
Transportation						
Tourist Guide						
Café						
Other						

xvii) Is tourism infrastructure like restaurants, hotels, parks etc. built in Abbottabad?

Yes ☐ No ☐

xviii) Does tourism construction degrade environment?

Yes ☐ No ☐

If “Yes” How it effects environment?

Loss of Scenic Beauty ☐ Loss of Bio-Diversity ☐

Trees Cutting ☐ All ☐

Other, Specify ☐

xix) Is there economic benefit at the cost of environment?

Yes ☐ No ☐

APPENDIX ‘B’**Section Two****Tourist Information**

i) Area of visit _____, Own home town _____, Started journey from _____

ii) Is this your first visit to this tourist destination in Abbottabad?

Yes ☐ No ☐

iii) How many times you visit this tourist place in a year?

In tourist months _____ In non-tourist month _____.

iv) How did you arrive to tourist destination in Abbottabad?

Using Own Car ☐ By Bus/ Taxi ☐

Other, specify ☐

v) How much distance is there from your home to this tourist spot? _____km

vi) How much traveling cost did you bear? PKRs _____

vii) Did you visit alone or with family _____.

viii) If with Family? Total family Members

ix) How many days will you stay in Abbottabad? _____.

x) Where will you stay in Abbottabad?

Hotel Rest house Own House

Relatives Other, specify

xi) How much accommodation cost do you bear? PKRs _____

xii) What are the main reasons for your visit to this tourist destination?

Tourist Spot

Rest and Relaxation

Visiting relative and friends

Business Reasons

Study Tours

Other, specify

xiii) Did you face traffic congestion in tourist area, during traveling?

Yes

No

xiv) Do you feel any increase in prices of goods in tourist spot as compared to normal prices?

Yes

No

xv) Any other problems do you face. Please specify

APPENDIX 'C'

Section Three

Shopkeeper Information

i) How far is our shop from the main road?

On main road

at tourist spot

- Away from main road ☐ Other ☐
- ii) What type of shop _____.
- iii) What are the tourist busiest months in this region encircle please?
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
- iv) Does the benefit of your business increase in tourist months?
Yes ☐ No ☐
If "Yes", then how much sale you have Rs. _____ per month.
Tourist month's (June-Aug) _____
Non tourist month's (Other) _____
- v) Does prices of goods increase during tourism season. (Jun to August)
Yes ☐ No ☐
If "Yes", how much net benefit you gain _____ per month.
Tourist month's (June-Aug) _____
Non tourist month's (Other) _____
- vi) Please state the influencing factors of increasing prices in tourist months
(June to August)?
Rank Please
Due to increase in number of tourist ☐
Due to increase seasonal demand ☐
Due to less supply of product in particular area ☐
Because of gaining higher net benefit ☐
- vii) The most fluctuated commodities are,
Name of the commodities 1) _____ 2) _____
3) _____ 4) _____ 5) _____
6) _____ 7) _____ 8) _____

APPENDIX 'D'

Section Four

Hotel Manager Information

- i) When is the busiest season for you?
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

- ii) What types of tourist visit to your hotel?
 Single ☐ With family ☐ With Friends ☐
 Other, specify ☐
- iii) What services are provided by hotel?
 Meal ☐ Wi-Fi ☐ Gym ☐
 Swimming pool ☐ Other, Specify ☐
- iv) Does Rental charges increases in tourism season
 Yes ☐ No ☐
 If “Yes” How much you get monetary benefit _____ per month.
 Tourist months (June-Aug) Rs _____
 Non Tourist months (Other) Rs _____
- v) How much garbage comes out from your hotel per months?
 Tourist month’s (June-Aug) _____
 Non Tourist month’s (Other) _____
- vi) Who collect the garbage from your hotel?
 a) AMC
 b) Local bodies (institute)
 c) Own staff
 d) Others
- vii) Do you bear garbage producing cost?
 Yes ☐ No ☐
 If “Yes”, how much Rs _____ per month
 Tourist months (June- Aug) Rs _____
 Non Tourist months (Other) Rs _____

Appendix 1

*Monthly Prices Indices of Selected Commodities in
District Abbottabad in the Year 2012*

Commodity	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Chawal basmati krenal 1	90.2	90.2	90.2	90.2	90.2	99.2	101.1	101.1	111.9	111.9	111.9	111.9
Chawal sela krenal	99.8	99.8	99.8	99.8	99.8	107.9	107.9	107.9	94.3	94.3	94.3	94.3
Chawal basmati krenal 2	93.1	93.1	93.1	93.1	93.1	100.9	105.6	105.6	105.6	105.6	105.6	105.6
Mota channa	88.5	88.5	88.5	88.5	88.5	107.2	110.8	110.8	107.2	107.2	107.2	107.2
Dahl mash	92.7	92.7	92.7	92.7	92.7	106.8	108.7	108.7	103.0	103.0	103.0	103.0
Dahl mong	89.6	89.6	89.6	89.6	89.6	107.5	120.3	120.3	101.1	101.1	101.1	101.1
Dahl masoor	93.7	93.7	93.7	93.7	93.7	104.5	104.5	104.5	104.5	104.5	104.5	104.5
Lobia surkh	95.2	95.2	95.2	95.2	95.2	112.0	115.7	115.7	95.2	95.2	95.2	95.2
Lobia safaid	97.2	97.2	97.2	97.2	97.2	100.3	102.3	102.3	102.3	102.3	102.3	102.3
Baisan	93.9	93.9	93.9	93.9	93.9	97.8	105.4	105.4	105.4	105.4	105.4	105.4
Beef	95.6	95.6	95.6	95.6	95.6	100.4	110.0	110.0	100.4	100.4	100.4	100.4
Mutton	93.0	93.0	93.0	93.0	93.0	96.1	108.5	108.5	105.4	105.4	105.4	105.4
Chapal kabab	96.2	96.2	96.2	96.2	96.2	101.3	106.3	106.3	101.3	101.3	101.3	101.3
Pakory	85.7	85.7	85.7	85.7	85.7	104.8	104.8	104.8	114.3	114.3	114.3	114.3
Samosy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Milk	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Yougurt	99.4	99.4	99.4	99.4	99.4	99.4	107.0	99.4	99.4	99.4	99.4	99.4
Tea	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Roti	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Double roti	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mix sweet	98.7	98.7	98.7	98.7	98.7	98.7	106.6	106.6	98.7	98.7	98.7	98.7
Ghulab jaman	92.6	92.6	92.6	92.6	92.6	104.2	108.0	108.0	104.2	104.2	104.2	104.2
Fry fish	96.0	96.0	96.0	96.0	96.0	102.9	102.9	102.9	102.9	102.9	102.9	102.9
Kchi fish	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chawal tota sada	88.0	88.0	88.0	88.0	88.0	116.3	116.3	116.3	102.9	102.9	102.9	102.9
Channa safaid	88.0	88.0	88.0	88.0	88.0	93.5	108.9	108.9	112.2	112.2	112.2	112.2
Mix biscuit	98.4	98.4	98.4	98.4	98.4	98.4	107.8	107.8	98.4	98.4	98.4	98.4

Source: Authors' Calculations based on the Prices data collected from Food Control office, Abbottabad.

Appendix 2

*Monthly Prices Indices of Selected Commodities in the
Year 2013 in District Abbottabad*

Commodity	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Chawal basmati												
krnal1	90.4	90.4	90.4	90.4	90.4	92.8	107.1	107.1	110.2	110.2	110.2	110.2
Chawal sela kernal	86.4	86.4	86.4	86.4	86.4	94.8	112.2	112.2	112.2	112.2	112.2	112.2
Chawal basmati												
krnal 2	102.0	102.0	102.0	102.0	102.0	102.0	98.0	98.0	98.0	98.0	98.0	98.0
Mota channa	113.8	113.8	113.8	113.8	113.8	97.6	88.9	88.9	88.9	88.9	88.9	88.9
Dahl mash	97.8	97.8	97.8	97.8	97.8	95.1	101.4	101.4	103.2	103.2	103.2	103.2
Dah mong	84.2	84.2	84.2	84.2	84.2	86.3	120.2	120.2	113.0	113.0	113.0	113.0
Dahl masoor	87.5	87.5	87.5	87.5	87.5	85.2	111.4	111.4	113.6	113.6	113.6	113.6
Lobia surkh	90.6	90.6	90.6	90.6	90.6	91.9	109.6	109.6	109.0	109.0	109.0	109.0
Lobia safaid	113.2	113.2	113.2	113.2	113.2	84.9	93.4	93.4	90.6	90.6	90.6	90.6
Baisan	123.9	123.9	123.9	123.9	123.9	90.3	90.3	90.3	77.4	77.4	77.4	77.4
Beef	98.4	98.4	98.4	98.4	98.4	98.4	107.8	107.8	98.4	98.4	98.4	98.4
Mutton	102.4	102.4	102.4	102.4	102.4	85.3	102.4	102.4	99.5	99.5	99.5	99.5
Chawal kabab	98.4	98.4	98.4	98.4	98.4	98.4	107.8	107.8	98.4	98.4	98.4	98.4
Pakory	115.2	115.2	115.2	115.2	115.2	105.6	86.4	86.4	86.4	86.4	86.4	86.4
Samosy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Milk	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Yougurt	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Tea	115.6	115.6	115.6	115.6	115.6	88.9	88.9	88.9	88.9	88.9	88.9	88.9
Roti	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Double roti	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	104.7	104.7	104.7	104.7
Mix sweet	87.5	87.5	87.5	87.5	87.5	103.7	109.8	109.8	109.8	109.8	109.8	109.8
Ghulab jaman	89.2	89.2	89.2	89.2	89.2	102.7	108.6	108.6	108.6	108.6	108.6	108.6
Fry fish	90.6	90.6	90.6	90.6	90.6	108.8	108.8	108.8	105.1	105.1	105.1	105.1
Kchi fish	102.0	102.0	102.0	102.0	102.0	106.9	97.2	97.2	97.2	97.2	97.2	97.2
Chwal tota sada	91.5	91.5	91.5	91.5	91.5	100.8	113.2	113.2	103.9	103.9	103.9	103.9
Channa safaid	98.6	98.6	98.6	98.6	98.6	110.9	101.0	101.0	98.6	98.6	98.6	98.6
Mix biscuit	99.2	99.2	99.2	99.2	99.2	108.7	108.7	108.7	94.5	94.5	94.5	94.5

Source: Authors' calculations bases on the Prices data collected from the food control office, Abbottabad.

Appendix 3

*Monthly Prices Indices of Selected Commodities in the
Year 2014 in District Abbottabad*

2014	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Chawal basmati												
krnl1	95.1	95.1	95.1	95.1	95.1	106.2	106.2	106.2	95.9	106.9	106.9	95.9
Chawal sela krnl	100.6	100.6	100.6	100.6	100.6	100.6	100.6	100.6	101.3	101.3	101.3	90.9
Chawal basmati												
krnl2	78.0	78.0	78.0	78.0	78.0	125.4	125.4	125.4	111.5	111.5	111.5	99.4
Mota channa	98.1	98.1	98.1	98.1	98.1	101.3	101.3	101.3	101.3	101.3	101.3	101.3
Dahl mash	96.8	96.8	96.8	96.8	96.8	104.3	104.3	104.3	96.8	96.8	89.3	120.1
Dahl mong	83.9	83.9	83.9	83.9	83.9	115.0	115.0	115.0	107.8	107.8	107.8	112.1
Dahl masoor	100.5	100.5	100.5	100.5	100.5	97.9	97.9	97.9	97.9	97.9	97.9	109.9
Lobia surkh	105.2	105.2	105.2	105.2	105.2	98.0	98.0	98.0	98.0	98.0	98.0	86.0
Lobia safaid	106.6	106.6	106.6	106.6	106.6	93.7	93.7	93.7	93.7	93.7	93.7	104.7
Baisan	101.2	101.2	101.2	101.2	101.2	98.4	98.4	98.4	98.4	98.4	98.4	104.0
Mutton	98.6	98.6	98.6	98.6	98.6	102.8	102.8	102.8	98.6	98.6	98.6	102.8
Chapal kabab	97.5	97.5	97.5	97.5	97.5	101.8	101.8	101.8	97.5	97.5	101.8	110.2
Pakory	96.4	96.4	96.4	96.4	96.4	105.1	105.1	105.1	96.4	78.8	105.1	122.6
Samosy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Milk	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Yougurt	103.8	103.8	103.8	103.8	103.8	97.3	97.3	97.3	97.3	97.3	97.3	97.3
Tea	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Roti	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Double roti	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	106.1
Mix sweet	100.3	100.3	100.3	100.3	100.3	100.3	100.3	100.3	92.9	92.9	100.3	111.5
Ghulab jaman	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	96.4	92.9	100.0	110.7
Fry fish	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	112.1
Kchi fish	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	109.1
Chwal tota sada	103.4	103.4	103.4	103.4	103.4	98.9	98.9	98.9	98.9	98.9	98.9	89.9
Channa safaid	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	101.3
Mix biscuit	99.2	99.2	99.2	99.2	99.2	108.7	108.7	108.7	94.5	94.5	94.5	94.5

Source: Authors' calculations based on the prices data of Food Control office, Abbottabad.

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